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and the future of design

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New ways of thinking and acting
in the face of global tipping points

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Salvaged life jackets spotlight the
fashion industry's waste problem

volume 55:number 1
2023 spring

THE ULTIMATE PREDATOR



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The life of a yellow birch tree, from the challenges it faces to the role it plays in nurturing its local ecosystem.

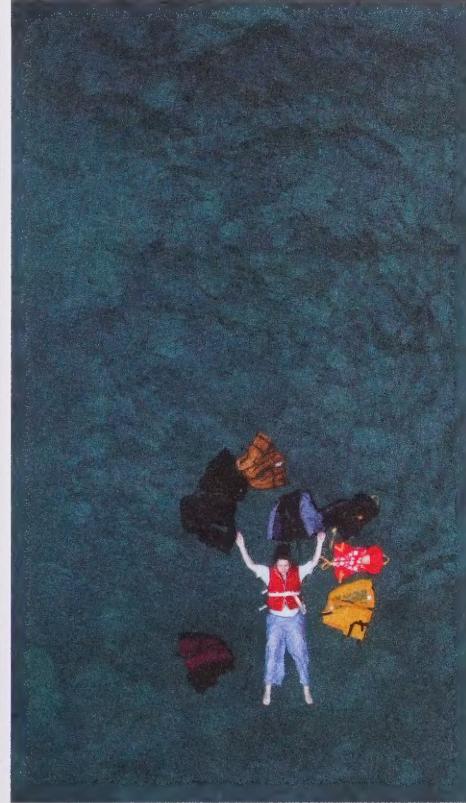
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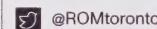
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A PUSH FOR CHANGE



When we think of climate change, we tend to imagine its most extreme manifestations: colossal chunks of ice tumbling into the Southern Ocean, forest fires raging across Alberta, coastal cities submerged under rising seas. But as is made clear in this issue, climate change affects the entire human experience, from our relationship with the natural world to the ways in which we think about and create art.

To truly understand the enormity and complexity of our ongoing climate crisis, we must see the problem holistically, with as wide a lens as possible. Fortunately, ROM is positioned to help visitors do just that.

Here, visitors can travel back millions of years in time to Earth's mass extinctions, which exterminated even the most fearsome predators, including the *Tyrannosaurus rex*, the star of ROM's immersive new exhibition from the American Museum of Natural History. Walking through the galleries, visitors can marvel at the ingenuity of El Anatsui's *Straying Continents*, a giant shimmering sculpture made from cast-off bottle caps threaded with copper wire. And, beginning in June, they can see *Noelle Hamlyn: Lifers*, a striking art installation of more than 20 life jackets the artist has repurposed and retailored to interrogate our culture's dangerous obsession with fast fashion—and its impact on global sustainability.

The singular breadth of ROM's collection and its potential to engage the public about the climate crisis inspired the creation of the Allan and Helaine Shiff Curator of Climate Change in 2021. Dr. Soren Brothers, the inaugural Shiff Curator, has made substantive change across the Museum in his short time here, including the introduction of our popular "Climate Change: History and Hope" tours. And, in this issue, he discusses the idea of tipping points: critical junctures beyond which reversing course is near impossible. In most climate change discourse, tipping points, such as the collapse of the east Antarctic ice sheets, are unambiguously bad—a descent into negative feedback loops with ever-worsening consequences. But, as Dr. Brothers astutely notes, we are also at a positive societal tipping point—one of unprecedented public ecological awareness and action. If we move beyond this tipping point, constructive change will accelerate, restoring greater balance to Earth's ecosystems. So what the world needs now is another little nudge.

And ROM is pushing.

Josh Basseches
ROM Director and CEO

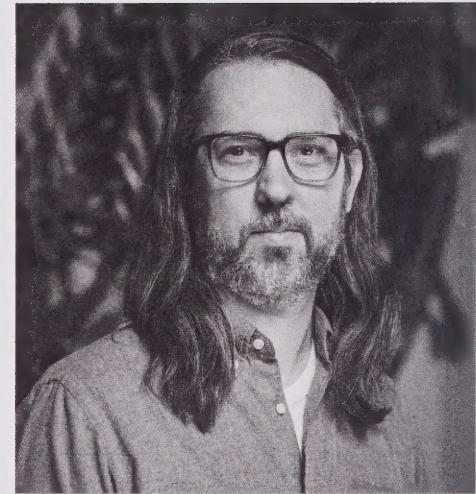
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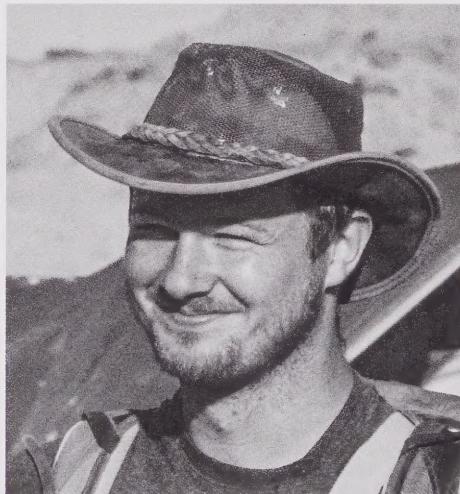
Alexandra Palmer is ROM's Nora E. Vaughan Senior Curator of Global Fashion & Textiles. Her many exhibits include *Fashion Follows Form* (winner Richard Martin Award). Her award-winning books include *Christian Dior: History & Modernity, 1947–1957* and *Dior: A New Look, A New Enterprise 1947–1957*.



David Evans

*James and Louise Temerty Endowed Chair,
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David Evans holds the Temerty Chair in Vertebrate Palaeontology and oversees dinosaur research at ROM. David is recognized globally as an authority on the rich dinosaur fossil record of Canada, and on the mass extinction event that marked the end of the Age of Dinosaurs.



Gregory Funston

*Banting Postdoctoral Fellow,
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Gregory Funston is a Banting Postdoctoral Fellow at ROM. His research focuses on the growth of extinct dinosaurs and mammals and how ecosystems evolved over millions of years. His work has taken him around the world, from the badlands of Alberta to the Gobi Desert of Mongolia.



Rachel Gotlieb

*Ruth Rippon Curator of Ceramics,
Crocker Art Museum*

Rachel Gotlieb is the Ruth Rippon Curator of Ceramics at the Crocker Art Museum. She was the founding curator of the Design Exchange and co-wrote *Design in Canada: Fifty Years from Tea Kettles to Task Chairs and The Art of Clairtone: The Making of a Design Icon 1958–1971*.

Membership

Dispatches

Wildlife Photography

In Focus: Yellow Birch

DADT 11

MEMBERSHIP

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Members get free and unlimited access and are among the first to see new special exhibitions. Watch your eNews for details.

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Music Born of the Cold

Friday, May 19, 2023,
10:00 a.m. to 5:30 p.m.

Noelle Hamlyn: Lifers

Friday, June 2, 2023,
10:00 a.m. to 5:30 p.m.

Being and Belonging

Friday, June 30, 2023,
10:00 a.m. to 5:30 p.m.
Saturday, July 1, 2023,
10:00 a.m. to 12:00 p.m.



For a list of all Member-related events and programs, visit rom.on.ca/members/events.

Thank you for your continued support. As a ROM Member, you are an integral part of the social fabric that makes ROM one of the world's leading museums of art, culture, and nature. Your membership helps support our access programs and open the doors of the Museum to underserved communities, as well as helps fund our growing slate of original programs and exhibitions, which provide inspiring learning opportunities, diverse perspectives, and a home for lifelong learners.

LOOKING FOR THE PERFECT GIFT?

Give the gift of membership. With a ROM membership, your family and friends will enjoy free and unlimited admission to our galleries and special exhibitions, plus exclusive benefits, all year long. Supporting ROM through membership also helps ensure that our ongoing research, preservation, and curatorial work continues.

Members save on select one-year gift memberships. Visit ROM.on.ca/gift for details or call us at 416-586-5700.



Luke Anguhadluq
Angakkuq Entering the Drum Dance
about 1977
coloured pencil, graphite

2022 MEMBERSHIP-ELECTED TRUSTEE RESULTS

ROM's membership program is an important aspect of the Royal Ontario Museum's commitment to public access and accountability. Pursuant to the ROM Act, ROM Members elect three of the 21 positions on the Board of Trustees. A call for nominations to fill one vacancy for a membership-elected Trustee was made in March 2022. Two candidates were nominated, and an election was held from May 16 to May 30, 2022. Virginia Van Vliet was elected by the membership, for a three-year term of office from July 1, 2022, to June 30, 2025. Virginia is a retired librarian and an active member of ROM's Department of Museum Volunteers Board, and has been a committed volunteer for the last 25 years. ROM congratulates Virginia and looks forward to working with her on the Board. ROM also thanks its Members for their interest and participation in the Trustee election.

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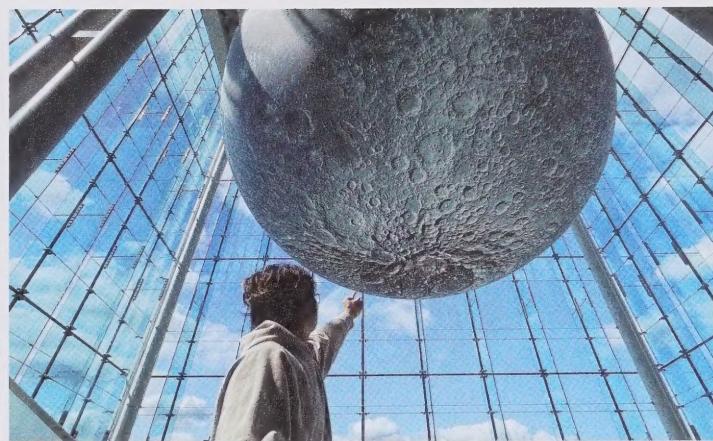
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Enjoy free or discounted general admission all year long to the Art Gallery of Nova Scotia, Kamloops Art Gallery, McCord Stewart Museum, Montreal Museum of Fine Arts, and Vancouver Art Gallery upon presentation of a valid ROM membership card and ID.



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Members receive free general admission or exclusive discounts at the following natural history museums: Beaty Biodiversity Museum, Vancouver, British Columbia; Canadian Museum of Nature, Ottawa, Ontario; The Manitoba Museum, Winnipeg, Manitoba; New Brunswick Museum, Saint John, New Brunswick; Nova Scotia Museum of Natural History, Halifax, Nova Scotia; Royal Saskatchewan Museum, Regina, Saskatchewan; Yukon Beringia Interpretive Centre, Whitehorse, Yukon.

 For more information, visit rom.on.ca/reciprocal.

Free Member Weekends

BATA SHOE MUSEUM

327 Bloor St. W. (at St. George St.), Toronto, ON
Saturday, May 6 & Sunday, May 7, 2023

AGA KHAN MUSEUM

77 Wynford Dr., North York, ON
Saturday, June 17 & Sunday, June 18, 2023

MCMICHAEL CANADIAN ART COLLECTION

10365 Islington Ave., Kleinburg, ON
Saturday, July 22 & Sunday, July 23, 2023



MEMBER EVENING

Members turned out in extraordinary numbers on February 7 for the first Member Evening of 2023. Members had the opportunity to enjoy live music; mingle with other Members; and speak one-on-one with ROM curators and experts in the *Wildlife Photographer of the Year*, *Canadian Modern*, and *Kent Monkman: Being Legendary* exhibitions. Thank you to all the Members and their guests, who made this evening a great success!

Save the date—we will host another Member Evening on May 17, 2023. Sign up to our email list to make sure you are among the first to know when registration opens.

 Visit rom.on.ca/members/events for details on booking tickets.

טַבְעָה תַּסְאַרְנִית! MUSIC BORN OF THE COLD

Discover the breadth and diversity of Inuit musical expression in a new exhibition that invites visitors to consider the connections between Inuit visual arts and two prominent musical genres: drum dancing and throat singing.

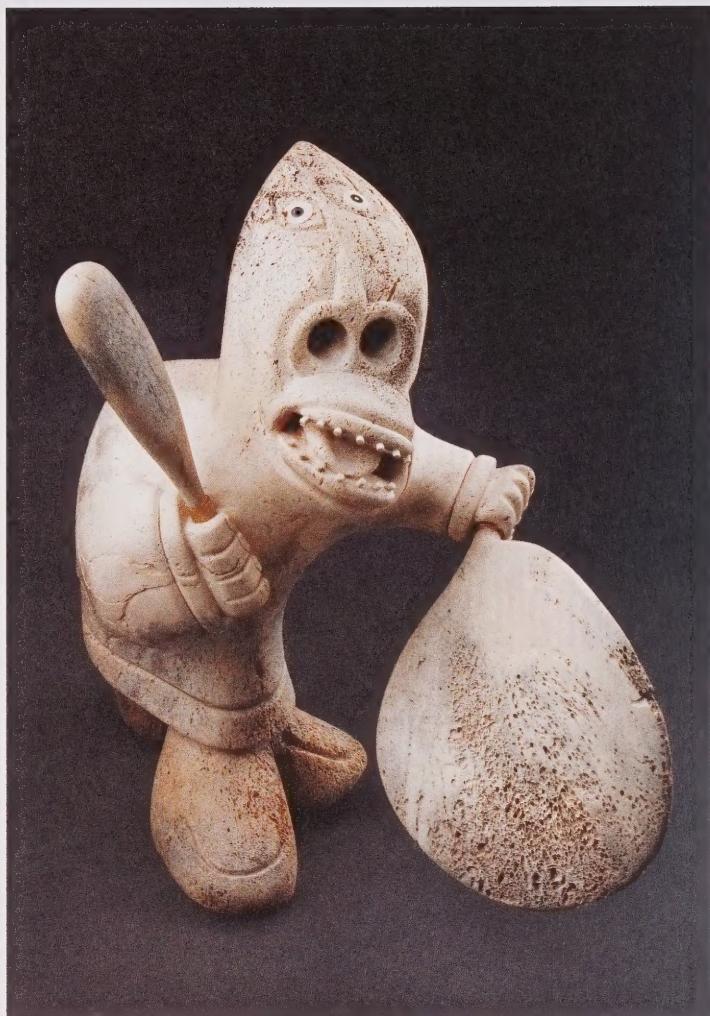
Opens May 20, 2023

Karoo Ashevak
Untitled (Drum Beater)
about 1973



An exhibition organized by the Montreal Museum of Fine Arts.

An exhibition curated by Jean-Jacques Nattiez, ethnomusicologist and Professor Emeritus at Université de Montréal, and Lisa Qiluqqi Koperqualuk, Curator and Mediator of Inuit Art, MMFA, in collaboration with Charissa von Harringa, Curatorial Associate, MMFA.



BEING AND BELONGING

Being and Belonging is a bold exhibition exploring the defining issues of our time from the perspective of 25 women artists from or connected to the broader Islamic world, spanning across West Africa to Southeast Asia and those living in diaspora. Deftly interrogating themes of identity, power, sexuality, and home, this exhibition resists simple stereotypes with outstanding artworks from both emerging and well-established artists.

Opens July 1, 2023

Manal AlDowayan
O'sister
2021
Tussar silk and acrylic



The exhibition is generously supported by the Royal Exhibitions Circle.

REPATRIATION

The sacred repatriation journey of Pauline Poundmaker, Brown Bear Woman

By Colin J. Fleming



Chief Poundmaker's saddle.

ON MAY 23, 2019, 134 years after Chief Poundmaker was found guilty of treason and sentenced to three years in a Manitoba penitentiary, Prime Minister Justin Trudeau stood on the “sacred lands of the Poundmaker Cree Nation” and apologized. “We recognize that during his lifetime Chief Poundmaker was not treated justly nor showed the respect he deserved as a leader of his people,” Trudeau said. “If we are to move forward together on the path of reconciliation, the Government of Canada must acknowledge the wrongs of the past.”

Among the many in attendance that day was Pauline Poundmaker, Brown Bear Woman, then Pauline Favel, the great-great-granddaughter of the revered Chief. Since that day, Pauline Poundmaker, Brown Bear Woman, has embarked on what she calls her “spiritual journey”—returning her great-great-grandfather’s belongings to her family. (Many of his belongings were seized after his arrest and later scattered across Europe and North America.) Last year, Parks Canada returned Chief Poundmaker’s sacred staff. And on February 22, 2023, ROM returned his pipe and saddle bag during a repatriation ceremony at the Museum. Respectively acquired by ROM in 1936 and 1924, his belongings were finally coming home.

Your great-great-grandfather’s pipe and saddle will be returned to you in just moments. What’s going through your mind?

When you think of the enormity of this day, it’s beyond description. I’m the daughter of

Alma Poundmaker. And in 1967, her and her brother were our representatives when they first brought [Chief] Poundmaker home [to be reinterred]. And they used to call her when they were doing Centennial commemorations to come on behalf of the Poundmaker family. I was given that opportunity in 2019 when Poundmaker was exonerated. But now I’ve been given this honour of leading the repatriation on behalf of my family. It’s a spiritual journey. It’s a historical journey. And you are also a part of sharing our story.

Many of Chief Poundmaker’s belongings are scattered across North America and Europe. So what’s next?

It’s going to be quite busy. I wrote several letters in the fall to museums in Canada and Europe, in the middle of getting Brown Bear Woman Foundation Inc. registered, letting them know who we are, who I am, why we want to repatriate, and we had a couple responses. So we will resume our conversations with [them] when we get back.

As museums such as ROM reckon with their colonial past, they’re trying to rebuild relationships with Indigenous communities. What’s the best way to do this?

The best way is to be open and listen. The part that might not be the best is telling people “we have our museum policies.” You need to be open to the fact that many Indigenous people—and we’re different nations across

Canada—follow strict universal repatriation laws. For some, only the family can come get their objects. Being open to hearing that and putting the thinking aside of, “well, we have policies”—that’s the best way. And we found working with Fort Battleford and with ROM, you were able to listen to us.

When I talked to my Elder this summer, I said, “What can you tell me about Poundmaker?” In Cree, she told me, “He was a very kind man, and he was known for that.” He was wrongly accused of treason—it shouldn’t have been that way. But it happened. You can never change the past.

That whole process of the exoneration was huge. But the process of Poundmaker’s story wasn’t complete yet. This is the next part of his story—to bring his sacred belongings home.

Everything we’re going through is an educational experience. We’re teaching you about us, our family. You’re teaching us about ROM, about your space here. It’s a historical moment, and the next generation will know these stories. This will be on record at ROM, this conversation you’re having with a direct descendant of Chief Poundmaker. This is healing.

This conversation has been edited for length and clarity. To read the full interview, visit rom.on.ca/ magazine.

OUR PLANET IN FOCUS

Wildlife photography showcases the splendor of a planet in peril

By Sheeza Sarfraz

EARTH IS TEEMING with countless diverse species that have evolved and adapted to its every nook and niche, from its deep oceans to its high mountain peaks and everywhere in between. But ours is a vulnerable homestead threatened by the climate crisis. Melting ice caps, rising sea levels, and erratic weather patterns are sounding the alarm. *Wildlife Photographer of the Year* displays award-winning photographs that showcase the splendor of life on Earth, as well as the delicate balance it strikes to survive here.

Like fossils in limestone or insects trapped in amber, the photos capture our moment in time, showing the state of our changing world while also revealing what is at stake.

Complex ecosystems hang in the balance as we witness unprecedented levels of biodiversity loss across the globe. In this photograph, Karine Aigner puts a spotlight on cactus bees and their unique ways, calling attention to pollinators and the risks they face. The caption calls attention to the world's bees that are "under threat from habitat loss, pesticides, and climate change." Animal pollinators are responsible for about 35 percent of global food production, and dwindling populations will have far-reaching impact, on food sources across the globe.

Wildlife photography is, in many ways, the convergence of art and science. And like both works of art and scientific evidence, it becomes more valuable as the years pass. Let these photos serve as a reminder of what we have, not as a record of what we have lost.

Exhibition closes April 23, 2023.





The big buzz by Karine Aigner, USA

WINNER, BEHAVIOUR: INVERTEBRATES

Karine Aigner gets close to the action as a group of bees compete to mate.

A TREE ON STILTS

The life of a yellow birch

By Deborah Metsger and Colin J. Fleming

FOR MOST OF US IN CANADA, “birch tree” conjures images of the fast-growing white birch, *Betula papyrifera*, with its black-lined, gleaming white bark peeling horizontally. Less often seen is its equally attractive close cousin, the yellow birch, *Betula alleghaniensis*—which grows within the canopy of moist mixed forests, its native habitat.

The yellow birch is a slow-growing tree easily recognized by its curly, yellow bark and characteristic habit of appearing to grow on stilts. It is also the most economically important birch that grows in North America, prized for its high-quality timber.

Here, we explore each stage in the life of a yellow birch tree along a hypothetical historical timeline, looking at its patterns of growth, the pests it encounters, the challenges it faces, and the role it plays in nurturing its local ecosystem, from nurse log to nurse log.

Origins

In a cool, east-facing ravine along the Humber River stands a mighty yellow birch—21 metres tall and 107 years old. It is March 1874, seven years after Canadian Confederation, and the tree is bursting with life. Its dense, deep crown is thick with alternate branches adorned with double-toothed leaves that are dark green toward the sky and a slightly paler green on the underside. And in this damp forest, life is thriving.

The forest is home to sugar maples, beech, basswoods, white elms, and hemlock—all of which support countless other species, from tiny caterpillars to squirrels and owls. Soon, this yellow birch itself will bring new life. Over the fall and winter, the tree holds immature male flowers in slim clusters called “catkins.” Come spring, the flowers mature, and the catkins elongate and dangle from branches, exposing the ripe, pollen-bearing stamens to winds that blow through the forest before the leaves emerge. With luck, blown pollen lands on the upright female catkins of nearby yellow birch trees. Once the female flowers are fertilized and produce seeds, the catkins bear fruits—brown nutlets surrounded by a thin wing designed to catch the wind. The following winter, the winds disperse the ripe, seed-bearing nutlets throughout the forest.

Few of these seeds survive. Instead, they become food for birds and small mammals or slowly decompose. Such is the destiny of most seeds, but yellow birch seeds also face another obstacle: the germinating seed cannot penetrate leaf litter and can sprout only in enriched mineral soil, rotting stumps or trunks called “nurse logs,” or in the crevices of rock ledges.

Fortunately, one of the fruits lands on a mossy, rotting tree stump—the ideal environment. In June, its seed germinates. Not long after, it puts up two seed leaves, then a stem with alternate leaves. Thus, new life begins.

Growth and Reproduction

This yellow birch seedling, like all plants, needs heat and sunlight to grow. But in its first years of life, it lives under a thick canopy, the leaves of the mature neighbouring trees blocking most of the light. So the little yellow birch waits.

Seasons pass. The shade-tolerant yellow birch grows slowly—less than 2.5 cm in height over ten years. All that time, it faces myriad threats—dry spells, heavy rains, grazing deer and rabbits—but survives them all.

Everything changes when a nearby elm tree, nearly 22 metres tall, is struck by lightning and falls toward the earth, where it lands with a roaring boom. For the first time in its entire life, the small yellow birch is exposed to a large opening in the canopy, allowing it to soak up the sunlight. Finally, it begins to grow tall.

Because the seedling was perched on a rotting tree stump, as the tree trunk lengthens, its descending roots must wrap around the stump until they eventually reach the soil. Once there, the roots penetrate the earth, then spread out horizontally. As the yellow birch grows, the stump rots until it’s gone entirely, leaving the roots high in the air, which gives the impression that the tree is perched on stilts.

As the trunk of the yellow birch expands outwards, the smooth golden-brown bark splits and curls in horizontal peels, its colour



changing to the distinctive yellow-bronze that gives the tree its name. In autumn, the tree's green leaves turn a brilliant yellow. In winter, they brown and fall to the ground, exposing the zigzag twigs with plump winter buds. The reddish-brown twigs, when bruised or chewed, taste and smell of wintergreen—a signature feature.

In 1925, at the age of 50, the yellow birch begins to bear catkins and annually disperses its pollen on the wind in spring and fruits in winter, ushering in a new generation. By 1945, as the soldiers begin to return home from WWII, the 70-year-old yellow birch is a fully mature tree—24 metres tall, with a trunk 60 cm in diameter—and an integral part of the local ecosystem.

Relationships and Survival

Like all plants, this yellow birch feeds on sunlight, water, and minerals. The green pigments in its alternate-toothed leaves carry out photosynthesis, capturing the sun's energy and turning it into sugars. Below the earth, the yellow birch roots are in a symbiotic relationship with numerous mycorrhizal, or "root fungi," living in the soil. One of them, the bicoloured deceiver, *Laccaria bicolor*, surrounds the yellow birch roots with thin white hyphae, helping them reach further in the soil in search of minerals and nutrients. In return, the fungus receives the sugars it needs to grow.

Over the years, the yellow birch serves as the host plant for an array of animals, most of which live in harmony with the tree. These animals include caterpillars of moths and butterflies, as well as scores of other insects. White-tailed deer eat its leaves. Beavers and porcupines chew its bark. A family of yellow-bellied sapsuckers (small, straight-billed woodpeckers), who make the yellow birch their nesting ground in 1981, feed on its sap. But living with other beings is not always a perfect equilibrium, and throughout the yellow birch's lifespan, it faces many threats.

Among the most devastating is the harvest of yellow birch for its prized wood and, increasingly, climate change. The yellow birch also faces organic enemies, such as defoliating Tent Caterpillars attacking other species of trees nearby, and all manner of insects, including the Birch Skeletonizer, *Bucculatrix canadensisella*, which can destroy the foliage by summer and whose successive attacks can make the yellow birch more vulnerable to its greatest pest: the aptly named Bronze Birch Borer Beetle, *Agrilus anxius*.

Throughout its long life, this yellow birch is spared from these threats but eventually succumbs to a more subtly pernicious enemy: the *Neonectria* canker fungus, *Neonectria galligena*.

Death and Decomposition

In the winter of 2018, a raging snowstorm batters the mighty yellow birch. The tree sur-

As the yellow birch grows, the stump rots until it's gone entirely, leaving the roots high in the air, giving the impression that the tree is perched on stilts.

vives, but the heavy weight of the snow leaves cracks in the axils of its branches, which is where the fungus invades. The fungal infection causes cankers (a cancerous growth) and a twig blight, which causes dieback in branches. Most trees can survive such an infection. But the damaged tissues leave the door open to deadly wood rot fungi such as chaga, *Inonotus obliquus*, and birch polypore, *Fomitopsis betulina*. By 2019, at 144 years old, the yellow birch finally succumbs to these infections and dies.

But even in death, the yellow birch nourishes life. As a snag—a dead, standing tree—the yellow birch is home to a multitude of birds and small mammals. Then, in 2022, when a violent gust of wind blows the tree down, the yellow birch lies as a fallen trunk on the forest floor. Here, it supports a new suite of organisms. Salamanders take shelter beneath the log, and beetles, ants, millipedes, and wood-rotting fungi eat away at the wood. Gradually, these, along with a host of lichens and mosses that have colonized the rotting log, convert its wood to rich organic matter and soil. The next winter, a seed from a nearby yellow birch tree nestles into the rotting stump of the fallen tree.

Months later, in June 2023, a new yellow birch begins to sprout.

New Field Guide

Interested in learning more about trees like the yellow birch? Pick up ROM's *A Field Guide to Trees of Ontario*—a comprehensive, easy-to-browse handbook, now available online, in bookstores, and at the ROM Boutique.



T. rex

Lifers

Climate Change

Karim Rashid

DO IT NOW

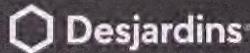
THE ULTIMATE PREDATOR

A closer look at Canadian tyrannosaurs

By David C. Evans and Gregory Funston

T. rex: The Ultimate Predator
On until September 4, 2023

Presenting Sponsor



This exhibition is organized by the American Museum of Natural History, New York (amnh.org).

The exhibition is generously supported by
the Royal Exhibitions Circle.





TYRANOSAURUS REX, the iconic Tyrant Lizard King of the dinosaurs, still holds the throne as the largest meat-eating animal ever to walk the Earth. As the African lion is to cats, *T. rex* is but one species, albeit the largest and most famous, in a diverse family of tyrannosaurid top predators that the fossil record shows were widely distributed across the globe. With the opening of the *T. rex: The Ultimate Predator* exhibition, we highlight Canada's special contribution to the understanding of tyrannosaurs.

What you might not know about the tyrannosaur family is that Canada is one of the best places in the world to find fossils of tyrannosaurs and the dinosaurs they preyed upon. The history of discovery and scientific research on this fascinating group is deeply connected to the Canadian fossil record and even has surprising links to Toronto. Canada has probably produced the greatest number of tyrannosaur fossils, which have become central in our understanding of the biology of these fearsome animals.

Currently, four kinds of tyrannosaurs from Canada are recognized: *Albertosaurus*, *Gorgosaurus*, *Daspletosaurus*, and *Tyrannosaurus rex* itself. Most of their fossils come from southern Alberta, but they're also known from sites around Edmonton and southwestern Saskatchewan and even from footprints in northeastern British Columbia. These tyrannosaur fossils track through about 15 million years of time, showing the gradual evolution of the skeleton right up to and including *T. rex* itself, the last of the tyrannosaurs.

The western scientific story of tyrannosaurs in Canada starts with the discovery of *Albertosaurus* on June 9, 1884, when Joseph Tyrrell, who was working for the Geological Survey of Canada, famously found a tyrannosaur skull while prospecting a coal-laden rock face in what would become Alberta 21 years later. This was certainly not the first fossil found in this area and not even the first

tyrannosaur, as Indigenous peoples found dinosaur fossils while living on their ancestral lands. Nevertheless, it was Tyrrell's find (the first major dinosaur find in Canada), named *Albertosaurus* in 1905 in the same publication as *T. rex*, that helped focus the search for dinosaurs on Alberta, forever entwining tyrannosaurs in the story of Canadian palaeontology. Interestingly, a 71-million-year-old bonebed of *Albertosaurus* at Dry Island Buffalo Jump Provincial Park near Huxley, Alberta, preserves at least a dozen individuals at different growth stages in a single site. This has suggested to some scientists that tyrannosaurs might have lived and hunted in large social groups, like lions, although this idea is controversial.

Perhaps, the best-known tyrannosaur of all is *Gorgosaurus*, of which dozens of good skulls and skeletons and hundreds of isolated teeth and bones have been found in what is now Dinosaur Provincial Park northeast of Brooks, Alberta. This species was the most common top predator in western Canada 75–77 million years ago. A complete skeleton of *Gorgosaurus*—described in 1914 by Lawrence Lambe, Canada's first vertebrate palaeontologist—gave us our first real view of what a whole tyrannosaurid looked like, including the group's most famous and most perplexing feature: their tiny, two-fingered arms. A skeleton of *Gorgosaurus* is also the most complete tyrannosaur in ROM's collections; this subadult skeleton, collected by a ROM field crew in 1933, has loomed large over the dinosaur galleries for decades and can currently be seen in the James and Louise Temerty Galleries of the Age of Dinosaurs.

Found in the same rocks as *Gorgosaurus* is the larger and more powerful tyrannosaurid *Daspletosaurus*. *Daspletosaurus* is more closely related to *T. rex*, which is apparent from looking at its huge, robustly built skull with bone-crushing jaws. Specimens of *Daspletosaurus* are much rarer than those of *Gorgosaurus*, but ROM is actively excavating

an enormous skeleton of *Daspletosaurus* that is shaping up to be the largest of its kind ever found. The field collection and lab preparation of this specimen will be featured in the exhibition *T. rex: The Ultimate Predator*, where you can see the original skull on display.

The most famous tyrannosaur of them all, *T. rex*, lived 66–67 million years ago and is the last and largest of the tyrannosaurs. Fossils of this dinosaur icon have even been found in Canada. So far, three skeletons have been discovered. Notably, these include "Scotty," the biggest *T. rex* ever found (estimated living body weight of 9,000 kg, about the size of two elephants), from the Frenchman Formation of southern Saskatchewan. The original skull of a special *T. rex* specimen from southern Alberta nicknamed "Black Beauty" (due to the black colour of its bones) will be the first original *T. rex* skull ever exhibited at ROM, as part of *T. rex: The Ultimate Predator*.

But more than their diversity, Canadian tyrannosaurs have taught us volumes about the biology of the living animals. Scaly skin impressions show that the biggest tyrannosaurs must have had sparse coverings of filamentous feathers, if any at all. Gouges on the snouts of these tyrants tell us they snapped and scuffled for dominance. And microscopic growth marks inside the bones record the passing of years, showing how fast a tyrannosaur grew up. As amazed as J.B. Tyrrell must have been to find the skull of one of Earth's most terrifying predators, he could never have predicted the impact that discovery would have on Canada and on the world. Since then, Canada has become a world leader in dinosaur palaeontology, and its tyrannosaurs have inspired so many around the world. And now as part of *T. rex: The Ultimate Predator*, more tyrannosaur fossils will be at ROM than ever before, and you can come face-to-face with beautifully preserved fossil skulls of four Canadian tyrannosaur species, including a homegrown specimen of *T. rex*!

Canadian tyrannosaurs have taught us volumes about the biology of the living animals. Gouges on the snouts of these tyrants tell us they snapped and scuffled for dominance. And microscopic growth marks inside the bones record the passing of years, showing how fast a tyrannosaur grew up.



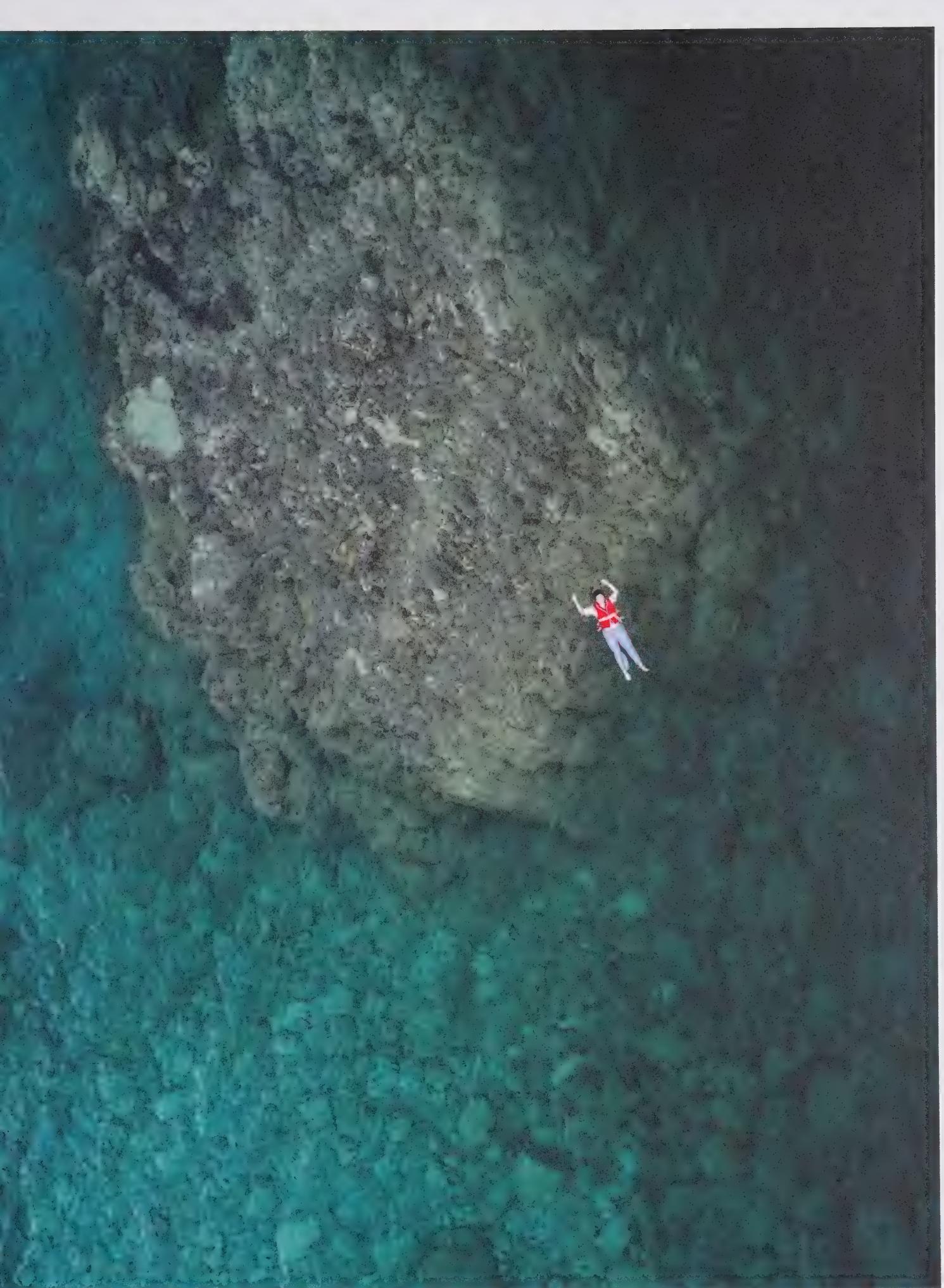
Jawbone with teeth of a *Daspletosaurus*, a close cousin of *T. rex*.

NOELLE HAMLYN: LIFERS

The artist, the work

By Alexandra Palmer







NOELLE HAMLYN: LIFERS is an immersive art and sound installation, an SOS during the sixth mass extinction, our era, the Anthropocene. Hamlyn's work is created from salvaged life jackets, wrapped and reconfigured with discarded fashions. Her lifers are elegant and puzzling; they float in space, suspended. The installation is surrounded by Geoff Coombs's large-format, luminous photographs of the lifers and travelling sound. You hear water, whispers, secrets. But no person. You are in a liminal space. Perhaps, you feel like you are buoyant or drowning. Could these stylish life jackets be a solution?

Lifers aims to shift the narrative of extinction by relocating human activity on the planet, working regeneratively with all finite organisms. Greenhouse gas emissions need to fall 45 percent by 2030 to limit global warming to no more than 1.5 degrees, as laid out in the Paris Agreement. In 2018, the United Nations Fashion Industry Charter for Climate was founded to achieve net zero industry emissions by 2050. The situation is urgent: after the oil industry, textiles and fashions are the second-greatest source of pollution. Textiles and fashions matter because they are intertwined in our lives.

Have we lost the high cultural and economic value that cloth and clothing have historically held? Today's consumers appear to be physically, intellectually, and emotionally disconnected from how garments evolve. We buy more and wear our clothes less. We no longer understand the true cost of fashion. Globalization, complex offshore supply chains, and trade agreements have accelerated cheaper and faster production. Earth.Org reports that over 100 billion garments are produced each year and 92 million tons end up in landfills. A garbage truck full of clothes dumps its load every second. Contemporary textile and fashion making hungrily consumes virgin resources, carbon, water, and fossil fuels, creating waste. This is an extractive

process, non-renewable, non-regenerative, but does not need to be so. The science-based facts are astonishing, which is why Noelle Hamlyn's work focuses on the problems of water and waste created by the textile and fashion industry. *Lifers* asks us to pause and rethink. It asks us to consider what we can do about this overproduction through our personal consumption.

In 2019, Hamlyn found washed-up life jackets during a walk on Salt Spring Island, British Columbia, where she was an artist-in-residence. She gathered them off the beach, took them to her studio, and began working. Hamlyn recalls: "I was attending a lot of artist talks and screenings for the Environmental Film Festival, and I was looking at ways of trying to stay afloat as the global waters are rising around us. I also started researching the *Titanic* disaster and realized that we have hit the iceberg again when it comes to climate change." *Titanic* survivors on lifeboats thought they would be back in time for breakfast, believing the ocean liner was unsinkable. "We're at that point today where we think we're indestructible," she says.

With limited supplies, Hamlyn began tailoring the life jackets with everyday fashion cast-offs. First, a man's black suit jacket, then a grey one. Her background in craft, fine art, costuming, and traditional hand-tailoring techniques allows Hamlyn to work three dimensionally, redesigning and remaking clothing in a new way: "I'll take the sleeves and put [them] as the head support. I try to use every element with [no] or little waste. I imagined the tailored suit flotation devices being worn by business executives who were attending their board meeting on a boat because their offices were underwater." Will lifers soon be required protection to get through our daily lives?

Over the last four years, Hamlyn's lifers looks have expanded, and they now include children's wear and even elaborately beaded

Opposite:
Noelle Hamlyn
Lifers
2019–present
Salvaged life jacket
(closed cell polyethylene foam, polyester fabric),
cotton knit suit jacket,
horsehair canvas, tailoring
silamide, nylon webbing,
buckle, D-rings





Noelle Hamlyn creating lifers in her studio.

Contemporary textile and fashion making hungrily consumes virgin resources, carbon, water, and fossil fuels, creating waste. This is an extractive process, non-renewable, non-regenerative, but does not need to be so. The science-based facts are astonishing, which is why Noelle Hamlyn's work focuses on the problems of water and waste created by the textile and fashion industry.

ones fit for a red carpet. Some are so exquisite and embellished that the life-saving function is reduced, hybrids between life preservers and fashions.

During the assembly, Hamlyn discovered that life jackets, considered unisex, fit male bodies better than female ones. Deciding which article of clothing goes on which life jacket made Hamlyn ponder how fashion and bodies change over time. An adult women's jacket from the 1940s is the right size for a child's lifer, as it covers the foam padding. She reflects: "There are interesting conversations to be had about children's fashion and growing up too quickly. Five-year-olds [are] wearing the same thing as a 15-year-old, who wears what a 25-year-old does." Hamlyn's lifers are characters in an imagined post-apocalyptic future, where everything is underwater. Fashionable lifers are now de rigueur and integrated into our wardrobes.

When Hamlyn returned to Port Credit, Ontario, pandemic restrictions were in place. Artists focused on presenting their work in digital forms. Hamlyn asked photographer Geoff Coombs to shoot her lifers project as she had originally intended: on a body, in water. He suggested Lion's Head because of the green-blue waters of Georgian Bay, a familiar location where he free dives (no snorkel, no

tank). These are the images she showed me on her phone when we first met at the opening for her spun book, *remembered and retold*, at 2gallery in Prince Edward County. The conversation developed into *Noelle Hamlyn: Lifers*. The second, more dangerous 2023 winter shoot that depended upon the Canadian climate producing hard ice, takes the work back to the *Titanic*.

As the work expanded, Hamlyn's background in dance, theatre, and costuming led to collaborations with sound artist Miquelon Rodriguez and spoken word poet Callahan Connor. Hamlyn explains: "We are thinking about past, present, and future. You can get rid of your clothing, but just because you throw it out doesn't mean it actually disappears. It just gets dumped or shipped off. Even if you imagine you've done a good thing by donating it, well, no, you've just shifted the problem to somebody else. We are not learning from the past but moving in a future dream."

Hamlyn notes that "lifer" is slang for life jacket, a term she used when she was a camp counselor teaching canoeing. It also refers to incarceration in the penitentiary system and a lifelong commitment. Like clothes, it's something that we are in forever. *Lifers* is an open-ended work, a series of questions. It asks you to look at your connection to fashion and

its impact on the environment. It asks you to think about the end life of the clothing you buy and wear, and it asks you to wonder what happens to it when you are done with it.

The polystyrene foam (virgin fossil fuel) lifers will outlive us. Detritus floating on the water. This is why Hamlyn talks about hubris: "We have a life jacket and think we are fine. But lifers are no solution. They are just another article of clothing and a big part of why we are in this situation." Our actions in fashion have real consequences.

Noelle Hamlyn: Lifers

June 3, 2023, to February 19, 2024

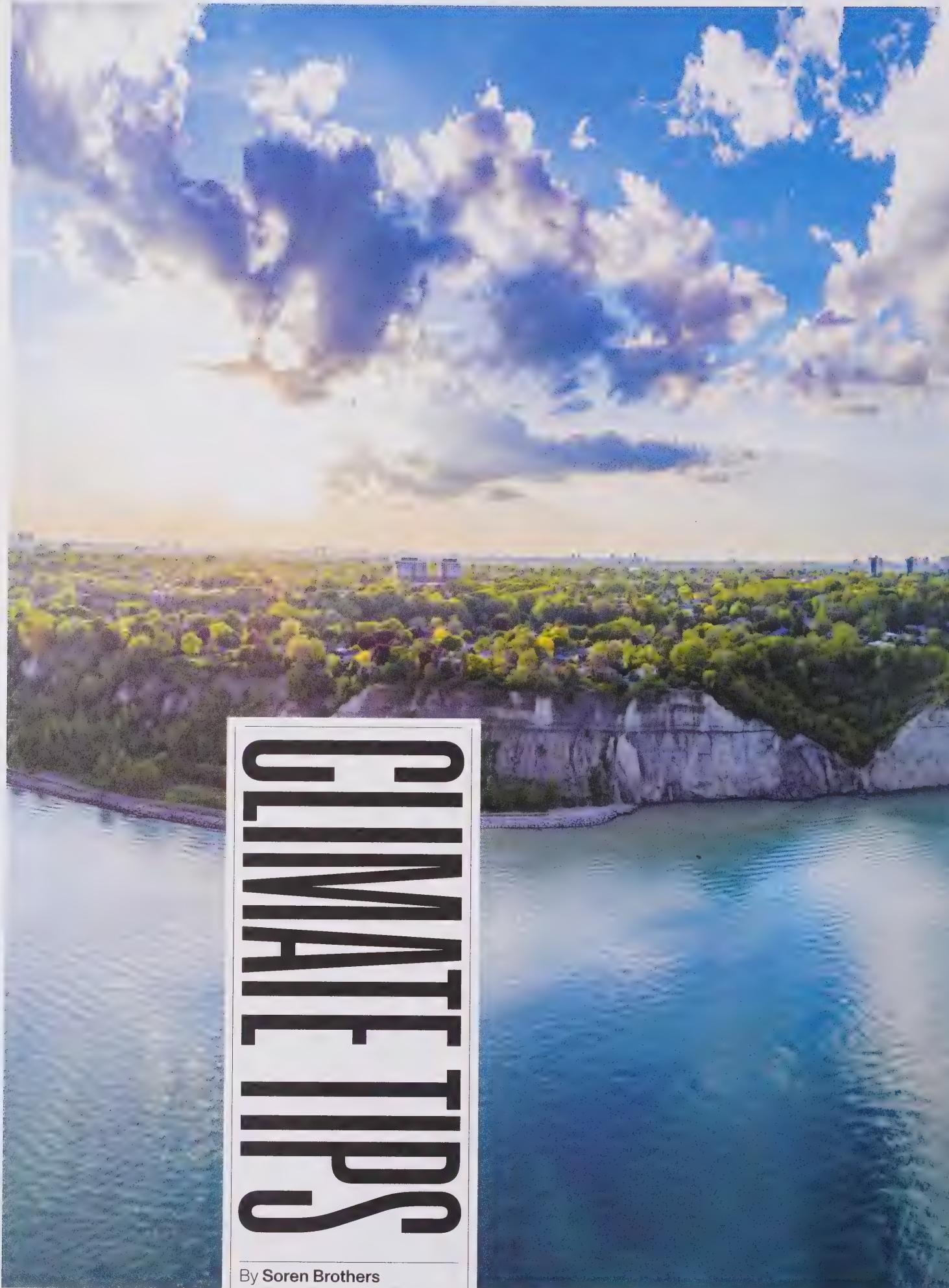
Level 3, European Special Exhibitions Gallery

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This project was undertaken with the financial support of Environment and Climate Change Canada

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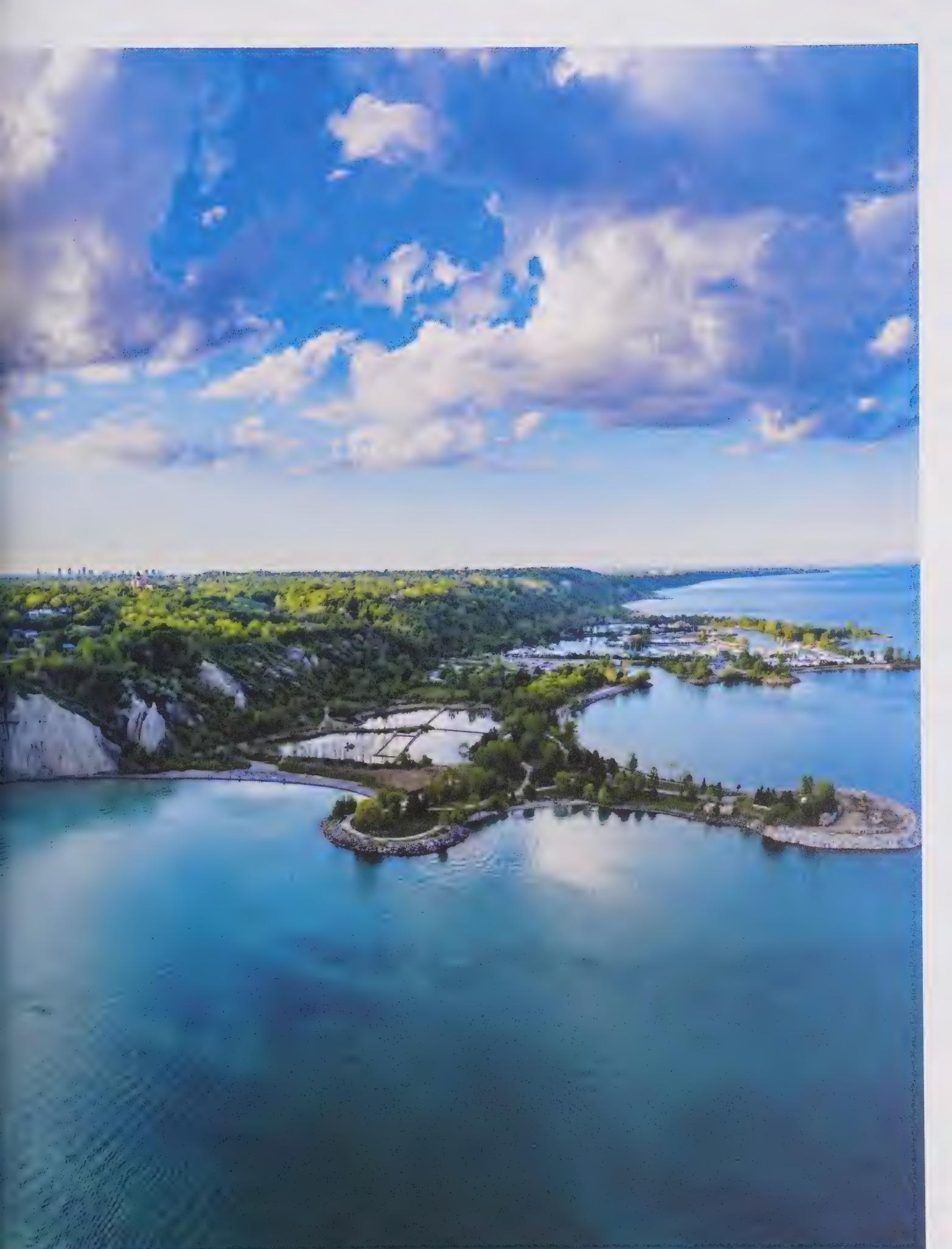
The exhibition is generously supported by the Royal Exhibitions Circle.



SOREN
BROTHERS

By Soren Brothers

Spring 2023





QUESTION: What's the difference between a Canadian and a canoe? **Answer:** A canoe tips.

Someone told me this joke maybe 20 years ago. Although it seems outdated in present-day Toronto, thinking back to it today I feel that some interesting lessons and observations can still be made from it. First of all, the core of the joke is the self-identification that seems common in Canada, envisioning ourselves as a staid, fiscally conservative bunch. As a Torontonian, I can't tell you how many times I've heard (or said!) that things happen slowly around here, that we'll never be on the front of any big movement or change. We're always watching from the sidelines, waiting to see if the water is safe before we go in. Whether this characterization is valid or not, I think it's fair to say that this is often how we perceive ourselves.

The other thing I take from that joke is the reminder of what it means to tip, as in tipping over a canoe. Once you lose that stable centre of balance, all bets are off. The canoe's rotational momentum takes over, and nobody in the canoe will avoid getting wet. Once you've been dumped in the water, returning the canoe to its upright position isn't easy, and getting back into the boat is tough. You'd better know how to swim. And I think it's fair to say that that's a useful analogy to start with when thinking about global tipping points involving climate change.

As a PhD student in Berlin, I studied two shallow lakes in the heart of Brandenburg forests. Although these lakes were similar in many ways, one of them had "flipped" at some point in the previous decades, from clear-water conditions with large submerged plants to a turbid state with only algae growing in it. Since the 1990s, scientists studying lakes

have worked to understand how these "regime shifts" can happen—essentially, why such a sudden change occurs in a lake ecosystem once a critical threshold, or "tipping point," has been crossed from human impacts (for instance, agricultural runoff). Arguably, the most important lesson has been that ecosystems can be strongly influenced by feedback loops. In the case of lakes, those large submerged plants need clear water to grow, but they also keep the water clear by stabilizing the mud at the bottom of the lake, taking up nutrients, and interacting with other organisms in the lake. At some point, if conditions get bad enough to kill those plants, a new series of feedbacks will kick in, making the lake more turbid and difficult to return to a clear-water state.

One of the first scientists to describe this process in shallow lakes is Marten Scheffer, who has later gone on to argue that such regime shifts exist all around us. According to Scheffer, our world is in a delicate balance where feedback loops might keep us stable in one spot, but we're always at risk of crossing a threshold beyond which another feedback loop will kick in, transporting us to a new state. Certainly, we've come to see that many ecosystems around the world, ranging from grasslands to coral reefs, can feature regime shift characteristics. More broadly, a widespread concern of scientists today is the possible existence of a global tipping point threshold that we might cross when it comes to planetary warming, setting off a chain reaction that will accelerate climate change, flipping the planetary state into some as-yet-unknown regime. Evidence suggests that climate feedbacks are already happening—for instance, with permafrost thaw in the Arctic

Public art provides a lens to think about climate change in a different way.

Opposite: The new river winding through the Port Lands provides a more natural outlet for the Don River into Lake Ontario. While the project's main goal is flood protection, it also includes the creation of new habitat and green space.

enhancing methane emissions from lakes. Recent studies have identified many major potential tipping points across the planet, and these studies warn that crossing one tipping point can also make crossing the others easier. The Intergovernmental Panel on Climate Change warns that we must keep our planetary temperature below a warming of 1.5°C to avoid crossing a global tipping point. To date, we have warmed our planet already by at least 1.1°C. If we want to avoid crossing the 1.5°C threshold, we will need to stop adding greenhouse gases to the atmosphere (reaching net zero emissions) by 2050, preferably sooner.

We can learn still more from regime shifts in lakes, though. While early studies described lakes as existing in just two states (clear or turbid), more recent studies have shown that the picture isn't so simple. Some studies describe intermediate states, or multiple self-reinforcing states depending on what type of plant community is present. Scientists still stress the importance of feedback loops in shaping lake conditions, yet the knowledge we're gaining about the complexity of lake ecosystems is revealing a new picture in which there may not be one single tipping point that determines the future of a lake but rather a range of interacting drivers and states. We can't, of course, say that what's true for lakes will be true for the Earth. At the same time, it would be hard

to argue that small, shallow lakes are more complex than the planetary system.

This isn't to argue that we shouldn't be concerned about crossing the 1.5°C threshold—the best knowledge available to us points to that as being a boundary to stay below. But we should be cautious when considering what such numbers mean to us and our societal planning. Major destructive feedback loops might be set in motion sooner or somewhat later than when the 1.5°C threshold is crossed. We are not necessarily safe below 1.5°C warming, nor are we necessarily doomed slightly above it. Our takeaway should be to do everything we can to avoid crossing this threshold but also to avoid every additional fractional increase in temperature if that threshold is passed. Ultimately, we cannot get to net zero soon enough, and the broad societal benefits that come with reaching that goal should suffice as the primary impetus to accelerate that progress, rather than fear of what lies at or beyond 1.5°C.

The research and writing that Scheffer has carried out over the years has taken the concepts of regime shifts in lakes and applied them not only to planetary thinking but also to human societies. Scientists around the world are now painting a picture of how sudden transformations can occur whereby societies embrace new realities, new ways of thinking and acting. When people think of regime

shifts, they tend to focus on the tipping point itself, the sudden change. What fewer consider, though, is that systems prone to regime shifts are characterized by apparently stable regimes when they are not actively shifting. In other words, the systems that seem the least flexible and most static might be particularly prone to sudden shifts.

And this brings me back to what's happening here in Canada and in Ontario. I've heard it said that when it comes to climate action, we need to "pierce the inertia" of our society and that our province may never be on the forefront of climate action, because of our conservative character. When I look around at what's happening, though, I see a province whose phase-out of coal remains the largest greenhouse gas emissions mitigation on the continent, nearly 10 years after the fact. I see what may be the largest and most exciting urban climate adaptation project in the world, the Port Lands Flood Protection Project, under development in downtown Toronto. I see a rapid change that is well underway and that seems to fly in the face of our self-effacing image. I don't see inertia; I see Canada tipping.

Soren Brothers is the Allan and Helaine Shiff Curator of Climate Change at ROM.



Karim Rashid on
fast fashion, artificial
intelligence, and
the future of design

Interviewed by Rachel Gotlieb

CONSUME LESS BUT BETTER

ONLY A FEW DESIGNERS enter the pantheon of global stardom, and Karim Rashid is one of them. The mark of a superstar designer—French designer Philippe Starck is also one—is that you can furnish an entire room using Rashid's products, fashions, and interior accessories. Rashid is a fashionista whose sartorial colour preference is monochrome pink and white, complemented by goggle eyeglasses completing his signature look. His stardom is closely associated with forging what he calls “sensual minimalism,” a style defined by expressive curves suited for CAD (computer-aided design) software programs, which arrived on the scene in the 1990s and forever changed design practice. His *Oh Chair* and *Garbino Can*, on display in the ROM exhibition *Canadian Modern*, exemplify this fluid aesthetic and show the marriage of a brilliant designer and digital technology that together manipulate plastics into thin and curvaceous forms.

Born in Cairo, raised and schooled in Canada, Rashid graduated from Carleton University's School of Industrial Design in 1982. He then cut his chops working for the

large firm KAN in Toronto, drafting an array of consumer products. At the same time, Rashid worked independently, finessing his distinctive sensual minimalist style. In the mid-1990s, Rashid moved to the U.S., and while he kept his Canadian clients like Umbra and Nienkämper, he went on to design for global giants Alessi, Issey Miyake, Armani, Target, Cappellini, and countless more.

How has the design industry changed since you began your practice in the 1980s?

Drastically. Firstly, design was not a public subject in the '80s. The word “design” was synonymous with fashion or graphics, not industrial design. Also, the major players in design were in Italy at that time, with more radical, more visible, and avant-garde work from [the design studio] Memphis and some [other] Italian manufacturers. Designers were not as visible or known. Also, no one talked about design as an agent of change and progress. Mid-century design was still regarded as the last frontier of design, but a new implosion was on the brink with computer-assisted design

as the beginning of design tools and new technologies. The companies that promoted design were mostly elitist and inaccessible.

Today, design is a public subject, where every brand or start-up must engage in design. Our everyday objects have become democratic and extremely sophisticated. Our tools and software as well as new material developments have come so far in comparison. Design is inseparable today from daily life.

You moved to the U.S. when you were in your 30s. In Toronto, you worked for KAN and co-founded Babel, important design and fashion companies. How did the move from Toronto to New York impact or change your practice?

I left KAN, closed Babel, and I went to RISD [Rhode Island School of Design] in Providence, Rhode Island, to teach. I was teaching part-time interior design at OCAD and furniture design at U of T, so I managed to get an assistant professor position at RISD. I was there for one year, with a three-year contract, but was fired, apparently for teaching philosophy and theory more than design. But RISD and most



art colleges in the U.S. were craft schools, and they were not teaching “design for industry”; hence, I was controversial. I was lost and penniless and felt that I [had] failed. I decided rather than move back to Toronto (which was at that time fairly provincial and very conservative) to go to NYC and try my luck.

Do you have a favourite or a soft spot for a particular vintage modern Canadian design from the '50s or '60s?

In the '80s, when I worked at KAN, we collaborated with Burt Kramer for the logo of Canada Post. I loved the logo for CBC that Burt designed, and it meant a lot to me since my father worked with CBC for 20 years. I also loved the first monoblock [all-plastic] chair (1946) of [Douglas] Simpson [and Arthur James Donahue] and the [Habitat Chair and] ottoman of Dudas Kuypers Rowan. And my favourite is the stereo [I don't remember who designed it], but it's enclosed [Hugh Spencer's *Project G*, manufactured by Clairtone Sound Corporation].

Where do you see design going in the next decade?

More importantly than design, I see the world moving toward manufacturing on demand. Not only does the Earth need this movement to survive, but we will be able to manufacture products when purchased or ordered versus inventorying millions of products and then trying to sell them. Fast fashion is burning 65 percent of its production, and we can't continue this way.

In regards to the design profession, I think it will eventually disappear. AI is already taking over our creativity and emotional precepts. There will not be work for many. In regards to objects and things, our landscape will hopefully dematerialize so we consume less but better, less but with more meaning, quality, and seamless function.

How does design influence generations and usher in change? Do you believe it allows for multiple perspectives?

Everything humans do is design, from designing political systems to vaccines, from city infrastructures to microchips. Design shapes progress and evolution.

Canadian Modern is on display until July 30, 2023.

Karim Rashid
Oh Chair
1979–present
Umbra, Toronto, ON
Polypropylene



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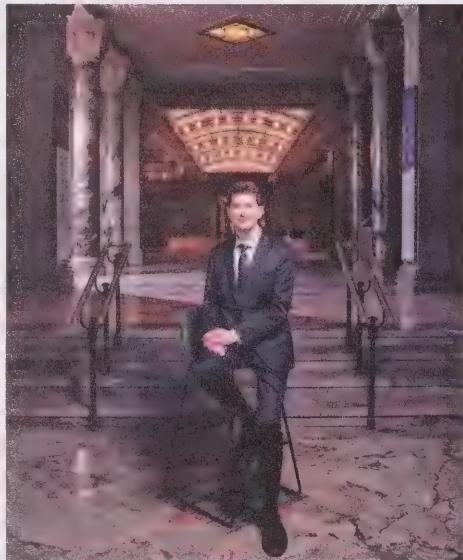
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Object Highlight

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SUPPORTING THE MUSEUM



Imagine visiting ROM and instantly being transported from one of Canada's busiest modern intersections to prehistoric places nearly four billion years ago—simply by touching a rock or seeing a fossil. Or exploring a gallery featuring extraordinary textiles and learning about their long environmental journey. Or viewing Kent Monkman's paintings and being profoundly moved by the relationships Indigenous people have with the land and understanding their systemic divesting through colonization.

I am continuously transfixed by the relevance ROM's collections have to today's world and to the most pressing issues we face, such as climate change. And that's why the Museum is the perfect place for conversations about climate change that are challenging, urgent, and above all, hopeful.

When it comes to climate action, not only are the incredible programs, practices, and exhibitions making a difference; our donors are also making inspiring strides toward a better future.

Take Allan Shiff. As he told *The Globe and Mail*, he had no real draw to climate action until recently. He suddenly realized the impact our environmental choices will make on the future of his family, so he took determined action by making a visionary donation to ROM to create the Museum sector's first-ever curatorship of Climate Change.

The Louise Hawley Stone Charitable Trust matched Allan's investment to endow that new position, held by Dr. Soren Brothers. The Trust was established long before climate science was an everyday concern, but the Trust continues to provide important funding for ROM as our priorities evolve.

Professor Francine McCarthy, a noted micropalaeontologist and ROM Research Associate, is working on a project alongside Dr. Brothers to determine when we entered the Anthropocene epoch—that is, the moment when human activity impacted the environment enough to constitute a permanent shift in Earth systems that is recorded in geologic settings worldwide. To ensure that the Museum can continue to do such important work, she is structuring a personal estate gift to ROM and joining the Currelly Legacy Society.

And then, there are organizations like our longstanding donor the Ivey Foundation. The Foundation recently announced that in winding up its operations in 2027, it will spend its \$100 million endowment to enhance efforts to advance Canada's net zero economy and increase the capabilities of the Foundation's core partners on the frontlines of Canada's climate and energy strategy.

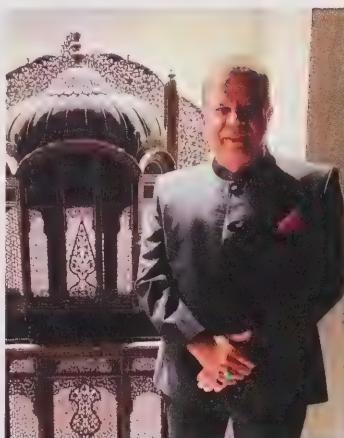
These examples are reminders that we all need to act now, whether that action is as simple as thinking about where to purchase your clothing or how your workplace manages its waste. I certainly feel inspired—and responsible.

We are deeply grateful to our diverse community of partners, donors, and volunteers, who make it all possible through their support, their actions, and their hope. You can be part of it too. Please visit rom.on.ca/support.

John Kearsey
President & CEO, ROM Governors



COLLECTOR'S ITEMS



When Ali Adil Khan and his wife, Shehla, emigrated from Pakistan over 30 years ago, Canadian art provided a way to connect to their new home. Ali Adil began collecting artworks depicting the Canadian wilderness—at first, slowly and on a shoestring budget, eventually progressing to larger acquisitions.

“But as I began to identify more and more with my new country, my attentions shifted increasingly toward pieces that told stories of my ancestral homeland,” says Ali Adil.

In the early 1990s, South Asian art was rarely sold in commercial galleries in Canada. Ali Adil opened his own gallery, inviting South Asian artists to exhibit their works and encouraging his community to invest in cultural art. As his “own best client,” he grew his personal collection to adorn every corner of his home, keeping him and his family connected to their heritage.

Recognizing the pivotal role that ROM could play in sharing the beauty and complexity of South Asian art and culture, Ali Adil began making modest

financial contributions. He developed a friendship with Dr. Deepali Dewan, ROM’s Dan Mishra Curator of Global South Asia, and was thrilled to find he could help strengthen the Museum’s collection.

“Ali Adil’s genuine friendships with artists across South Asia and the diaspora have made him a central figure in growing the South Asian art scene in Canada,” says Dr. Dewan. “We are grateful not only for his support in the acquisition of pivotal pieces by modern masters like Sadequain and Zainul Abedin but also for the artworks he has donated to the Museum.”

Through the Shehla and Adil Giving for Art (SAGA) Foundation, which he runs with his children Adnan and Nadia, Ali Adil has contributed remarkable pieces from his own collection as gifts-in-kind to ROM, including artworks that were created by distinguished Pakistani artists and will feature prominently in special programming this fall to mark Pakistan’s 75th anniversary.

Most recently, he bequeathed an ornate hand-carved jharoka

(see image) by renowned Punjabi architect Bhai Ram Singh to the Museum in his will. Understanding the importance of conservation, Ali Adil also has set aside funds in his estate to ensure that his legacy will be preserved well into the future. Through these bequests, he joined the Currelly Legacy Society, an inspiring group of donors who are shaping the future of ROM.

“Dr. Dewan’s vision and dedication to South Asian art and culture is a key reason for choosing to leave these pieces to ROM,” says Ali Adil. “I know my collection will be in good hands.”

Top:
Tazeen Qayyum
Sahil Ghalat
(Right Wrong)
2019
Ink on paper

The Khans will live on in the objects they have left behind. There are many ways to leave your legacy, tailored to your inspirations and capacity.

To learn more, please contact Janice Correa at janicec@rom.on.ca.

AN EPIC OF LIFE & DEATH

How ROM's collection tells the story of climate change

The story of climate change is bigger than wildfires, polar bears, and rising sea levels. It is a vast epic of life and death, one that began billions of years before the first factories choked the skies with smog and that continues today.

ROM's collection of 13.5 million artworks, artifacts, and natural history specimens helps tell this story. Here, four of our curators explain how.

Help us tell the story. And write the next chapter.

From visitor education to the appointment of Dr. Soren Brothers as the inaugural Allan and Helaine Shiff Curator of Climate Change to essential ecological fieldwork, ROM is fighting to change the narrative on climate change. But to win, we need your help.

Please donate today—and help us write the next chapter on climate change. Contact us at giving@rom.on.ca.



Acapulco Maxi Dress, 1968. Marilyn Brooks. Unicorn. Ban-Lon® printed.

In the 1950s–60s, the explosion of new synthetic fibres, stimulated by wartime production, resulted in a plethora of new products, including Ban-Lon® (1954) fashions marketed for the whole family. Its "wash-and-wear ease" allowed housewives to "relax and enjoy a care-free life." This is why Marilyn Brooks selected it for her textile design she fashioned into a wrinkle- and iron-free, lightweight maxi-dress, seen here and on display in *Canadian Modern* until July 30, 2023. It was perfect to pop into airline luggage for easy travel. Little did we question the ecological footprint of a linear material extracted from non-renewable coal and petroleum. Nylon and its new substitute, polyester, are not biodegradable. These garments will sit in landfill for hundreds of years.

ROM collections are filled with such stories; we just need to read them. Now in the Anthropocene, we can and must create only new products that "tread softly [on this Earth] because you tread on my dreams" (W.B. Yeats, 1899).

Alexandra Palmer
Nora E. Vaughan Senior Curator,
Global Fashion & Textiles



Vase—Ivory-Billed Woodpecker, 2013. Bovey Lee. Cut Xuan paper on silk.



A little brown bat in flight.



Anticosti Island Fossil.

ROM's recent acquisition of *The Hulu Vase* series, two papercuts created by Asian American contemporary artist Bovey Lee, is an artistic comment on human footprints in nature. Her creation references two traditional Chinese artistic forms: the blue-and-white ceramic and the folk art of papercut. For centuries, landscapes, animals, and plants were popular and considered auspicious in these art forms, reflecting people's wishes for a prosperous, idyllic life. However, in recent decades, massive urbanization has replaced much of China's once-untouched nature with modern infrastructures. In these papercuts, Lee features images of two endangered species, the ivory-billed woodpecker and the North Atlantic right whale, trapped in human-made environments, such as a living room and an aquarium. Enclosed by the classic shape of hulu (gourd) vases, a symbol for immortality and harmony in traditional Chinese culture, the ornate, elegant patterns of nature are interwoven with urban, industrial motifs. The artist compels us to ask, "What kind of footprints are we leaving behind?"

Wen-chien Cheng
Louise Hawley Stone Chair of East Asian Art

The mammal collection at ROM documents the presence of species from different places and times going back over a century. By doing biodiversity surveys like citizen-science Ontario BioBlitzes, we can compare present-day fauna with what lived in the past. The changing climate of the Anthropocene is a complex interaction of many different factors that affect both humans and wildlife. This impact is especially magnified for endangered species, which face additional threats. Three species of bats in Ontario were recently listed as at risk because of an invasive disease called "white-nose syndrome," which disrupts their winter hibernation, resulting in starvation before the spring emergence of insect prey. With increasing fluctuations in seasonality, climate change is an added uncertainty to the survival of these endangered bats.

Burton Lim
Assistant Curator of Mammalogy

Life on its own has never influenced our climate as much and as fast as our own species does today. Global climate changes also occur naturally on our dynamic Earth. At geological time scales, the changing shape, number, sizes, and positions of the continents play major roles. Sometimes, a perfect storm of causes led to mass extinction events. Mass extinction events are usually defined as the loss of at least 70 percent of all species on Earth. One of the five of these dramatic events occurred around 445 million years ago, at the end of the Ordovician Period. While most mass extinctions happened during periods of global warming, the end of the Ordovician coincided with a global cooling event instead, with massive glaciations triggering global sea level changes.

One of the best places on Earth to study this dramatic mass extinction event is at Anticosti Island in Quebec, a place under consideration as a UNESCO World Heritage Site. Come and see a small display of fossils from Anticosti in ROM's newest permanent gallery, the Willner Madge Gallery, Dawn of Life.

Jean-Bernard Caron
Richard M. Ivey Curator of Invertebrate Palaeontology



HIDDEN COSTA RICA AND PANAMA

Friday, March 8 to Thursday, March 21, 2024

Costa Rica and Panama are two of the most biodiverse countries on the planet. Both are rich in natural history and culture, and with a focus on sustainability and wellness, they are two of the most desirable places to visit in the world.

A unique 13-day adventure awaits with ROM Travel, starting with a 3-day introduction to Costa Rican culture and geography, where you will explore Costa Rica's capital, Tabacón Hot Springs, and the Arenal rainforest area. Then, board Adventure Canada's boutique 48-passenger sailing vessel, M/S Panorama, for a 10-day expedition with local experts and cultural ambassadors, exploring remote beaches and villages as you sail along the coasts of Costa Rica and Panama, and through the iconic Panama Canal.

Visit some of the most pristine rainforests in the world, encounter rare and beautiful flora and fauna, participate in thoughtfully planned programming, and learn about the history and culture of the area and its indigenous peoples, all in one extraordinary travel experience.



Double and triple cabins are available. For more information, contact ROMTravel at travel@rom.on.ca or at 416-586-8034.

ROMWALKS

ROMWalks are guided walking tours of Toronto and are organized by ROM's Department of Museum Volunteers to provide support for the Museum. The tours started in 1980 as an outreach program for ROM, when it was closed for renovations. The walking tours are scheduled from May to October and celebrate the diversity of Toronto's vibrant neighbourhoods, including history, architecture, and arts of all varieties.

Take your pick of free and paid Plus walks and Member walks exclusive and free to ROM Members. Or enjoy a paid group walk with your social or work group, scheduled at your convenience.

MEMBER EXCLUSIVE WALKS

On select days throughout the year, ROM Members have the opportunity to participate in Member-only ROMWalks that encompass the diverse aspects of Toronto's vibrant neighbourhoods including history, architecture, arts of all varieties, education and more. Members will be notified through Member emails when these exclusive walks are open for registration. These special walks are limited to small groups to ensure your enjoyment and registration is required. ROMWalks is organized by ROM's Department of Museum Volunteers to provide support for the Museum.

Annex

June 10, 2023

Explore the Annex neighbourhood west of Spadina, including churches, schools—and even the occasional murder.

Parkdale

July 8, 2023

Visit this newly revitalized neighbourhood, and learn about its beginnings as a prosperous suburb of early Toronto.

Grange

August 5, 2023

A colonial park owned by Toronto's early elite has developed into a neighbourhood of immigrants, workers, and professionals with a social conscience.

ROMWALKS PLUS

Monuments in Memory

July 9, 2023

Memorials to ordinary citizens and key moments provide a crash tour of Canada's history from 1870 to today.

Riverside

August 6, 2023

Change over time. This neighbourhood fascinates with stories of architecture, art, athletics, bees, bakeries, factories, filmmaking, Metrolinx, and more.

ROMWalks Plus: \$10 per person

FREE WALKS

Annex West

May 3, 2023

Meet inspiring people from the past, discover Toronto's lost cathedral, and learn about the neighbourhood murder that riveted Canada.

Kensington

May 10, 2023

In a bustling neighbourhood where memory and modernity collide, wander through what was once the old Jewish Market, past late Victorian buildings, and onto the University of Toronto campus.

Historic Danforth

May 14, 2023

Meet the Playters, an early influential family, see beautiful heritage homes, historical churches, an iconic Music Hall, and a former Nickelodeon.



Full details are available at rom.on.ca/romwalks.

ROMBUS

ROMBus is rolling again in 2023, exploring places of cultural and historical interest in Ontario. Our lineup of fascinating daytrips includes tours of the historic Welland Canal, the unique Toronto Islands and the First Light celebration at Sainte-Marie Among the Hurons.



To find out more about upcoming ROMBus trips, call 416-586-5797 or visit rom.on.ca/rombus.

CLIMATE HOPE

Bleached coral is not dead and recovery is possible

By Soren Brothers



THROUGHOUT THE EARTH'S HISTORY, we can see again and again that marine life tends to fare worse with climate change compared with life on land. For instance, the largest mass extinction our planet has ever seen, the Permian-Triassic Extinction 252 million years ago ("The Great Dying"), associated with planetary warming, saw the loss of more than 90 percent of marine life on the planet, including a complete loss of the planet's coral reefs. Coral reefs appeared again only millions of years later and as different groups of species. Today, bleached corals such as this one are emblematic of our climate crisis.

These magnificent ecosystems occupy less than one percent of the ocean floor but contain roughly one-quarter of its biodiversity and are also highly significant for local communities that rely on them for food and tourism.

Bleaching occurs when these organisms are stressed, for instance by heat waves warming the water just 1–2°C. Mass bleaching events are now occurring five times more frequently than they did just 40 years ago. A bleached coral is not dead, however—the coral polyp (an animal) has simply lost its connection to the algae that gives it colour and lets it survive.

Corals can recover from bleaching events, and environmental stewardship, practices including better urban waste management and sustainable fishing practices, can help improve their chances of recovery. This bleached coral reminds us of what we stand to lose from climate change but also that this immediate future is not yet written.

New Climate Change Tours

Explore the history of climate change through objects found in our galleries and learn about what can be done to protect our planet. Tours start in Chen Court at 11 a.m. (no registration required) on the first and third Thursdays and Saturdays of each month.

Everyone deserves a chance to roar



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